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## Abstract

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**PI Title:** ASSOCIATE PROFESSOR

**Project Title:** EFFECT CA++ FOODS ON BONE QUALITY IN PUBERTAL FEMALES

**Abstract:** *DESCRIPTION (Adapted from the Investigator's Abstract): Osteoporosis is a major public health concern. The application focuses on the problem early in life. Since there are no known safe, effective methods for restoring lost bone to the osteoporotic skeleton, prevention of osteoporosis is crucial. If skeletal development can be maximized during growth, young people will begin adulthood with optimal bone quality and be less likely to develop osteoporosis in later years. Yet bone health of children has not been adequately addressed. This proposal will build on 3 previous studies of bone quality in children. The aim of this experimental study is to test the effect of increasing dietary calcium intake to 1500 mg/day on increases in bone quality in pubertal females at age nine. The hypothesis to be tested is: pubertal females who consume a high calcium diet will have a greater increase bone quality, as measured by densitometry and ultrasound, than pubertal females who consume their usual dietary calcium intake. A convenience sample of 60 nine year old females will be randomly assigned to a treatment group given high calcium foods supplying 1500 mg/day for 4 years or a control group consuming their usual dietary calcium intake. Measurements of bone quality, bone mass, physical activity, dietary intake, height, weight, Tanner Stage, and medical history will be made at baseline, every three months, and at the end of the study. Evidence of a positive effect of increased calcium intake from food sources on bone quality in pubertal females will be followed by another proposal to determine if this treatment cohort can maintain their skeletal advantage into late adolescence. The overall long-term aim of the P.I.'s work is to test interventions designed to bring about conscious increase in calcium intake and physical activity in children that will improve their bone health and help to develop lifelong bone*

*healthy behaviors.*

***Thesaurus Terms:***

*bone development, developmental nutrition, diet therapy, dietary calcium, female, human puberty, human therapy evaluation, nutrient intake activity*  
*body physical activity, bone density, disease /disorder prevention /control, longitudinal human study, nursing intervention*  
*adolescence (12-18), clinical research, densitometry, human subject, middle childhood (6-11), nutrition related tag, ultrasound imaging /scanning*

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